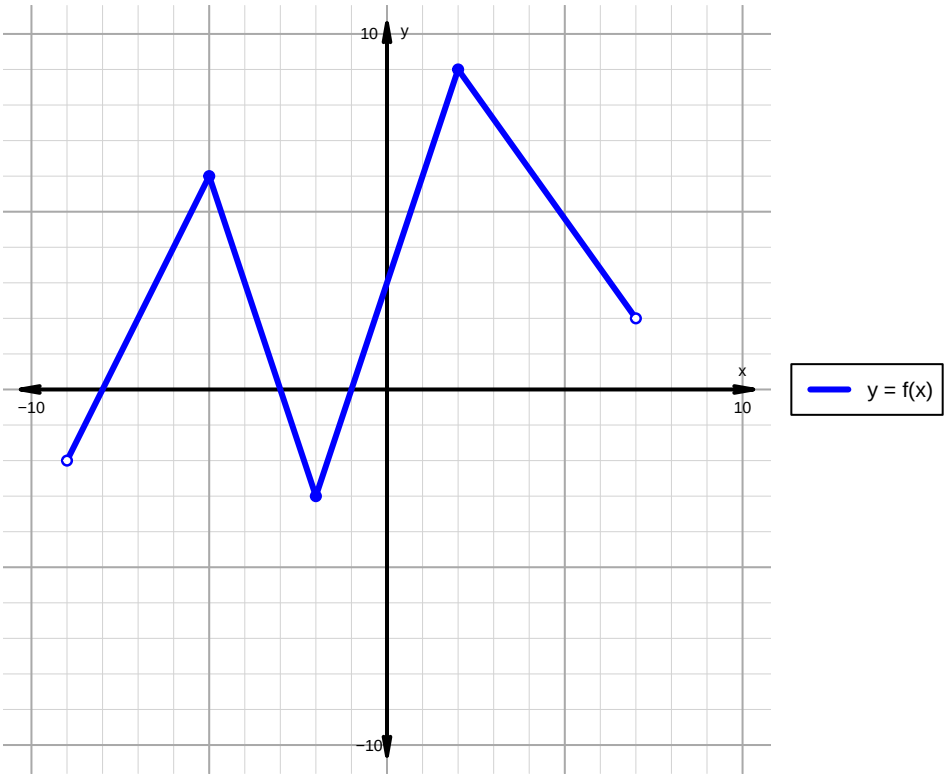
Name: Date:

Intervals, Transformations, and Slope Solution (version 20)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8,-3)\cup(-1,7)$
Negative	$(-9,-8)\cup(-3,-1)$
Increasing	$(-9,-5)\cup(-2,2)$
Decreasing	$(-5,-2)\cup(2,7)$
Domain	$(-9,7)$
Range	$(-3,9)$

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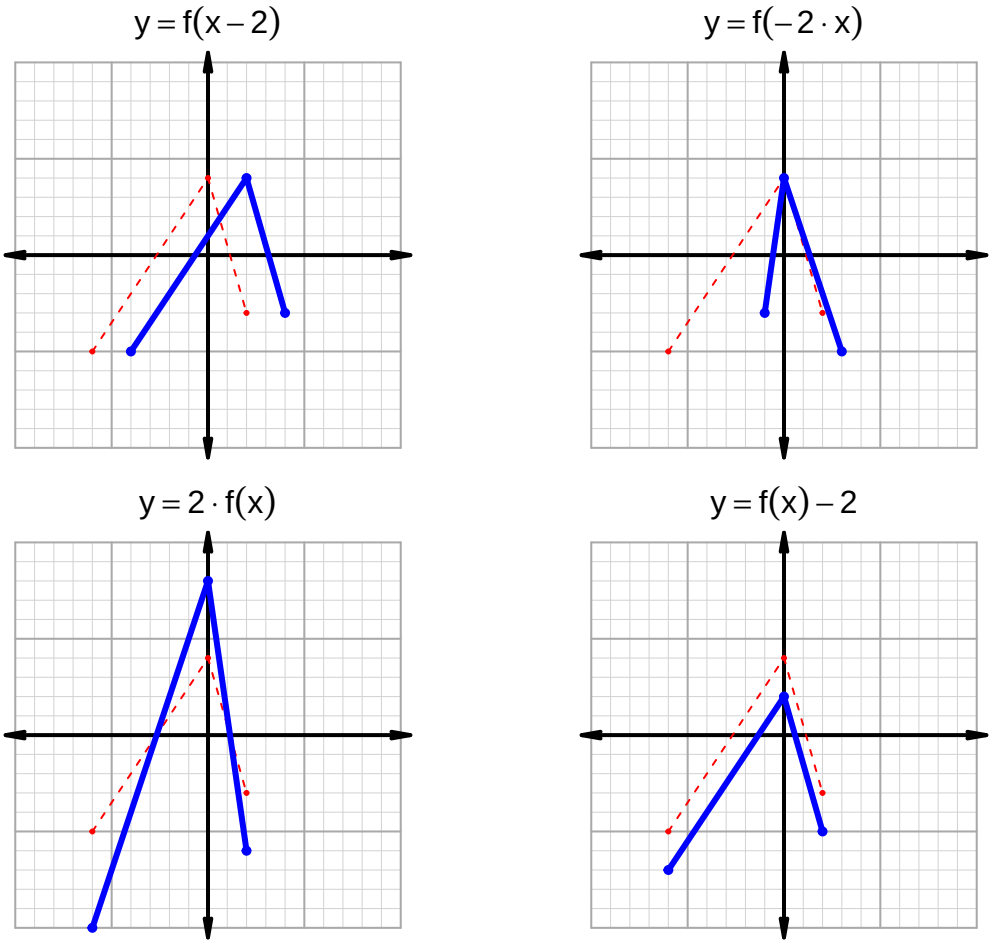
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 22$ and $x_2 = 26$. Express your answer as a reduced fraction.

x	$g(x)$
22	51
26	69
51	26
69	22

$\frac{f(26)-f(22)}{26-22} = \frac{69-51}{26-22} = \frac{18}{4}$

The greatest common factor of 18 and 4 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{2}$$